



MEMORANDUM

TO: Heather Chaffin, Case Manager
Planning and Zoning Department

FROM: Scott A. James, P.E., PTOE
Natalia Rodriguez, CNU-A
Development Services Department/Land Use Review

DATE: November 28, 2018

SUBJECT: Traffic Impact Analysis for East Braker Lane Tracts A & B
Zoning applications C14 – 2017 – 0066/ C14 – 2017 – 0100

Section 25 – 6 – 114 of the Land Development Code requires that a traffic impact analysis be conducted for a project proposed with a zoning application if the project is anticipated to generate more than 2,000 daily trips. The project site is located on the north side of East Braker Lane, east of its intersection with Interstate Highway 35. The applicant is proposing to rezone approximately 3.00 acres from SF – 2 to SF – 4A and GR, and rezone approximately 26.7 acres from SF-2 and DR to SF-4A and GR to allow for the following land uses:

- 153 single family residences,
- 7,700 square feet of general office, and
- 7,700 square feet of commercial and/or retail.

Staff from the Austin Transportation Department have reviewed and approved the May 18, 2018 “Traffic Impact Analysis, Braker Lane” submitted by BGE, Inc. with the following comments:

Nearby Roadways

East Braker Lane is classified as a major arterial roadway in north Austin, offering cross town access beginning at the intersection with Dessau Road to the east, and continuing westward to US Highway 183. In the vicinity of the site, East Braker Lane is a four-lane divided roadway with a posted speed limit of 35 miles per hour (MPH). There are sidewalks and marked bicycle facilities along both sides of the roadway.

Interstate Highway 35 (IH – 35) is a six lane freeway with two lane frontage roads in the vicinity of the site. The posted speed limit for the main lanes is 70 MPH and for the frontage roads, 55 MPH. No sidewalks or bicycle facilities are provided.

Wedgewood Drive/ Bluff Bend Drive is classified a residential collector street with two travel lanes and no sidewalks or marked bicycle facilities. The posted speed limit is 30 MPH from the intersection with Berrywood Drive and increasing to 35 MPH south of River Oaks Trail on the approaches to East Braker Lane.

Walnut Ridge Drive is classified a residential local street, with on street parking permitted along both sides of the roadway. A sidewalk is installed along the east side of the street. The posted speed limit is 25 MPH and no marked bicycle facilities are provided.

Plaza Drive is classified a residential local street with on street parking permitted along both sides. The assumed speed limit is 30 MPH. A sidewalk is installed along the south side of the roadway. As part of this site development, Plaza Drive will be extended eastward to connect to Wedgewood Drive and Walnut Ridge Drive as Hickory Grove Drive

Trip Generation Estimates

Based on the ITE Trip Generation Manual, 9th Edition, the development will generate approximately 2,008 new daily trips per day (vpd) with 161 trips occurring during the AM peak hour, and 222 occurring during the PM peak hour. Table 1 provides the unadjusted estimated number of daily trips.

Table 1 – Unadjusted estimate of weekday trip generation						
		Weekday AM Peak		Weekday PM Peak		Daily Totals
Land Use (ITE Code)	Intensity	Enter	Exit	Enter	Exit	
Single family (210)	153 DU	30	86	98	55	1,444
General office (710)	7,700 SF	10	1	2	9	75
Variety Retail (814)	7,700 SF	17	17	29	29	489
Totals		57	104	129	93	2,008

A 10% pass by reduction was applied to the estimated PM peak hour trip generation rates for the retail land use only. Table 2 on the following page, presents the adjusted weekday peak hour trip generation estimates.

Table 2 – Adjusted estimate of weekday trip generation

		Weekday AM Peak			Weekday PM Peak		
Land Use (ITE Code)	Intensity	Enter	Exit	Total	Enter	Exit	Total
Single family (210)	153 DU	30	86	116	98	55	153
General office (710)	7,700 SF	10	1	11	2	9	11
Variety Retail (814)	7,700 SF	17	17	34	26	26	52
Totals		57	104	161	126	90	216

Data Collection

Traffic counts were conducted on Thursday, May 25, 2017 when public schools were in session, and driveway counts for the existing land use were conducted to determine the current traffic volumes.

Trip Distribution

Tables 3A and 3B presents how the site generated traffic was assigned to the surrounding network of public streets. These percentages were used to determine the impact of the proposed development upon existing transportation infrastructure.

Table 3 A –Directional Distribution of Site Traffic (internal)

Direction	Exiting	Entering
Plaza Drive	15%	30%
Wedgewood Drive	84%	69%
Walnut Ridge Drive	1%	1%
Totals	100%	100%

Site traffic assigned to East Braker Lane, Bluff Bend Drive and IH – 35 frontage roads:

Table 3 B –Directional Distribution of Site Traffic (external)

Direction	Exiting	Entering
Bluff Bend Drive	5%	5%
East Braker Lane - westbound	18%	21%
East Braker Lane - eastbound	21%	23%
IH 35 – northbound frontage	25%	35%
IH – 35 – southbound frontage	30%	15%
Totals	99%	99%

Traffic Analysis Methodology

Table 4 on the following page presents the Highway Capacity Manual (HCM) definitions of 'levels of service' for both *signalized and unsignalized* intersections. Within the City of Austin, LOS "D" is considered the acceptable threshold for signalized operations and for intersections where the LOS is projected at "E" or lower, mitigation should be proposed.

Table 4 – Summary of Level of Service as defined by HCM		
Level of Service	Signalized Intersection Average Total Delay (Sec/Veh)	Unsignalized Intersection Average Total Delay (Sec/Veh)
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

The following tables present a summary of the analysis performed within the TIA. Table 5 presents the existing peak hour levels of service (seconds delay per vehicle) modeled for current year.

Table 5 – Existing Levels of Service (Year 2017)				
Intersection	Control	Peak Hour	Delay	LOS
East Braker Lane / IH 35 SBFR	Signal	AM	53.5	D
		PM	49.0	D
East Braker Lane / IH 35 NBFR	Signal	AM	40.3	D
		PM	56.1	E
East Braker Lane/ Wedgewood Dr	Signal	AM	10.4	B
		PM	14.1	B
East Braker Lane/ Walnut Ridge Dr	TWSC	AM	7.7	A
		PM	1.5	A
IH 35 NBFR / Plaza Drive	TWSC	AM	0.2	A
		PM	0.1	A

Table 6 on the following page presents the model results for the "No Build" and "Built" conditions for the year 2023.

Table 6 – No Build and Built w/o mitigation Levels of Service (Year 2023)					
		No Build Conditions		Built w/o mitigation	
Intersection	Peak Hour	Delay	LOS	Delay	LOS
East Braker Lane / IH 35 SBFR	AM	107.8	F	112.5	F
	PM	73.1	E	77.3	E
East Braker Lane / IH 35 NBFR	AM	55.4	E	65.9	F
	PM	80.9	F	90.8	F
East Braker Lane/ Wedgewood Dr	AM	12.6	B	25.4	C
	PM	15.4	B	22.2	C
East Braker Lane/ Walnut Ridge Dr	AM	21.1	C	22.2	C
	PM	2.2	A	2.5	A
IH 35 NBFR / Plaza Drive	AM	0.2	A	0.7	A
	PM	0.1	A	0.3	A

Summary of Future Conditions

The following conditions were identified in the TIA, as reflecting the future conditions of the project development, assuming all of the recommended improvements are implemented.

- The intersection of IH 35 and East Braker Lane will continue to operate at LOS (F) during the AM and LOS E during the PM peak periods of travel.
- The intersection of East Braker Lane and Wedgewood Drive will operate with LOS (C) or better during the AM and PM peak travel periods, according to the travel model forecast.
- The intersection of East Braker Lane and Walnut Ridge Drive will operate with LOS (C) or better during both the AM and PM peak travel periods, and
- The intersection of Plaza Drive with the northbound frontage road of IH – 35 is anticipated to operate with minimal delay to the main lanes of travel and slight delays for the side approaches, according to the travel model forecast.

Table 7 presents the results for the “Built with mitigations” scenario for the year 2023.

Table 7 – Future Levels of Service Built w/ mitigations scenario (Year 2023)				
Intersection	Control	Peak Hour	Delay	LOS
East Braker Lane / IH 35 SBFR	Signal	AM	55.2	E
		PM	44.1	D
East Braker Lane / IH 35 NBFR	Signal	AM	39.1	D
		PM	39.6	D
East Braker Lane/ Wedgewood Dr	Signal	AM	14.4	B
		PM	17.4	B
East Braker Lane/ Walnut Ridge Dr	TWSC	AM	19.1	B
		PM	2.4	A
IH 35 NBFR / Plaza Drive	TWSC	AM	0.7	A
		PM	0.3	A

Recommended Transportation Improvements

The TIA identified improvements to the surrounding public infrastructure to mitigate the calculated impact to traffic resulting from this development. The following is a summary of the proposed improvements:

Review staff discussed the need to implement physical improvements concurrently with the development of the site and prioritized the infrastructure elements accordingly. Therefore, after review and acceptance of the TIA findings, the following goals were identified:

- 1) Wherever feasible, staff prefers to have the developer construct physical improvements instead of posting fiscal towards the estimated costs of construction.
- 2) In locations where more than one improvement is identified, staff would accept a fully constructed single improvement in the place of several partial funded elements.
- 3) Where the suggested or recommended improvements are within or along Texas Department of Transportation facilities, the City of Austin shall defer to TxDOT review and approval for said transportation improvements.
- 4) Improve the pedestrian and bicycle facilities within and around the property to provide connectivity to urban trails, bicycle facilities, and adjacent properties.

Conclusions and Recommendations

After consultation with the applicant, transportation review staff recommends approval of these zoning applications, subject to the following conditions:

Prior to the 3rd reading of City Council, the applicant shall commit to the following:

- 1) The applicant shall post fiscal for the following transportation improvements:

Table 8 – List of Improvements			
Location	Improvements	Total Cost	Developer Share %
East Braker Lane / Wedgewood Drive	Construct southbound right turn bay and relocate signal pole	TBD	100%
	Revise signal timing	\$5,000	\$5,000 (100%)
IH – 35 frontage road/ East Braker Lane*	Construct southbound right turn bay	\$250,000	\$7,500 (3%)
	Construct northbound right turn bay	\$250,000	\$7,500 (3%)
	Construct westbound right turn bay	\$250,000	\$7,500 (3%)
	Revise signal timing	\$7,500	\$7,500 (100%)
	Totals	\$762,500	\$35,000*

*** Note: these improvements are subject to TxDOT review and approval, including proposed mitigation, cost estimates and percentage cost participation by the applicant.

At the time of Subdivision or Site Plan Application, whichever comes first, the applicant shall commit to the following:

- 2) Dedicate up to 70 feet of right-of-way (as measured from the centerline) along East Braker Lane, in accordance with the Austin Metropolitan Area Transportation [LDC 25-6-51 and 25-6-55].
- 3) Extend Plaza Drive/Hickory Grove Drive as a public street from Wedgewood Drive to connect to Walnut Ridge Drive. The right-of-way width and cross-section shall comply with City of Austin standards. The right-of-way shall be dedicated and constructed at the time of the first residential site development permit application.

4) Construct a public shared use path along the following streets in accordance with the Urban Trails Master Plan and Bicycle Master Plan:

- a. One side of Hickory Grove from Walknut Ridge Drive to Wedgewood Drive
- b. One side of Wedgewood Drive from Plaza Drive/Hickory Grove Drive to Braker Lane
- c. North side of Braker Lane from Wedgewood Drive to the eastern property line

The design and alignment of the public shared use path along shall be reviewed and constructed at the time of the adjacent site development permit applications. [LDC 25-6-55].

- 5) The proposal to construct a dedicated turn lanes at the interchange of East Braker Lane and IH - 35 frontage roads is subject to review and approval by the Texas Department of Transportation. A Donation Agreement shall be approved and executed prior to approval of the first Site Plan Application.
- 6) The location and number of driveways shall be reviewed at the time of the site plan application in accordance with City of Austin standards. The traffic impact analysis does not establish the location(s) and/or number of driveways.
- 7) Development of this property should not vary from the approved uses, nor exceed the approved intensities and estimated traffic generation assumptions within the TIA document (dated August 21, 2018), including land use, trip generation, trip distribution, traffic controls and other identified conditions.
- 8) The findings and recommendations of this TIA memorandum remain valid until November 28, 2023, after which a revised TIA or addendum may be required.



Scott A. James, P.E., PTOE

Development Services Department